Exxon Mobil Corporation

PCU 296-18 D1, D2, D3, D4, D5, D6, D7, D8, D9, D10, D11, D12, D13, D14, D15, D16, D17, D18, D19, and D20 (Directional Wells)
Section 18, T2S, R96W
Rio Blanco Co., Colorado
BLM Drilling Plan

1. The Estimated Tops of Important Geologic Markers

Formation	TVD (ft)
A Groove	1200
B Groove	1400
Wasatch A	2800
Wasatch C	4000
Wasatch G	5900
Ohio Creek	7850
Williams Fork	8050
Cameo	11950
Rollins	12250
Cozzette	12500
Corcorran	12900
TD	14050

Tops are RKB with an estimated KB elevation of 7,373'

2. The estimated depths at which the top and the bottom of anticipated water, oil, gas or other mineral bearing formations are expected to be encountered

	Top (ft TVD)	Bottom (ft TVD)	How Protected
Fresh Water	Surface	2800	Surface casing cemented to surface
Gas	5900	TD	3 casing strings provide isolation

3. Minimum specifications for pressure control equipment

   A. Wellhead and Tree Equipment:

"A" Section	-	10-3/4" SOW x 11" 5000 psi, sweet MultiBowl
"B" Section	-	11" 5000 psi x 11" 5000 psi, sweet Multibowl
Adapter	-	11" 5000 psi x 4-1/16" 10000 psi, sweet
Tubinghead	-	4-1/16" 10000 psi x 4-1/16" 10000 psi, sweet
Tubinghead adapter	-	4-1/16" 10000 psi x 2-1/16" 5000 psi, sweet
Tree	-	2-1/16" 5000 psi, sweet

B. Blowout preventer equipment:

Type	Pressure Rating	Installed on Casing
Type - RSRRAG	5,000 psi	10-3/4"
Type - RSRRAG	5,000 psi	7"

Additional preventers may be added and/or preventers with higher pressure ratings may be substituted depending on equipment provided by drilling contractor.

C. Testing:

(1) Operational Testing - an operational test consisting of closing the pipe rams on the drill pipe and closing the blind rams on open hole will be performed on each round trip but not more than once each day.

(2) Pressure Testing - An initial pressure test of 200 psi and 5,000 psi will be performed on the ram BOPs after nippling up on the surface casing string but prior to drilling out. The annular BOP will be tested to 200 psi and 5,000 psi upon installation. This initial test only may be performed on the "stump" and the BOP-wellhead flange will be tested when the stack is installed.

Subsequent pressure tests of the BOP equipment will be conducted as follows:
(a) Upon any component change of the BOP stack and/or choke manifold.
(b) At least every thirty (30) days.

Subsequent pressure tests will be at 200 psi and 5,000 psi for the ram BOPs, and the annular preventer will be tested to 200 psi and 3,500 psi. If a test plug is used, the rams will be tested to working pressure.

(3) BOP drills - A drilling crew proficiency test to perform the well shut-in procedure will be performed at least once each week with each crew.

D. BOP control unit:
Unit will be hydraulically operated and have one control station on the rig floor readily accessible to the driller and one located at ground level a safe distance from the wellbore.

E. Remote controlled choke:
Unit will be installed prior to drilling intermediate hole.

4. Auxiliary equipment and proposed casing program

A. Auxiliary equipment:
- Kelly cocks - upper and lower installed on kelly.
- Safety valve - full opening ball type valve to fit each type and size of drill pipe in use will be available on the rig floor in the open position at all times for use when the kelly is not connected to the drill string.

B. Casing:

String	Hole Size	Size / Weight / Grade	Approximate Depth Interval (TVD)	Approximate Depth Interval (MD)
Conductor	26"	16" Line Pipe (0.25 wall)	0-120'	0-120'
Surface	14-3/4"	10 3/4" 45.5# J55	0-4,050'	0-4,350'
Intermediate	9-7/8"	7" 26# P110 or 7” 23# L80 or 7” 26# K55	0-9,200'	0-9,850'
Production	6-1/8"	4 1/2" 15.1# P110	0-14,050'	0-14,600'

Substitutions of weight or grade may be required due to availability or variations in design loads. All pipe is in new condition. All casing threads and couplings will be API. In the case of needing increased tensile or torque ratings, premium connections, such as Hydril or Vam connections, may be used.

A stage tool may be placed in the surface and intermediate hole casing strings. The setting depth of the surface hole stage tool will range from 1,200 to 2,200 ft TVD. When applicable, the intermediate hole stage tool will be installed at a depth between the Wasatch G and Ohio Creek formations. Final stage tool setting depth will be based on actual formation tops and lost returns zones encountered while drilling.

The following table details the minimum design criteria for each casing string, based on working stress design.

Load	Safety Factors
Burst	1.10 if no wear 1.21 with 10% wear*
Collapse	1.125
Tension	1.33 body 1.50 connection
Compression	1.33 body 1.33 connection

* 10% wear is the standard assumption for casing that will be drilled through when the subject load is applied.

C. Cement:

- A stage tool may be used in the surface hole cement job to ensure cement is circulated to surface.
- A stage tool may be used in the intermediate hole cement job to ensure adequate top of cement.

Hole Size (inches)	Casing Size (inches)	Top of Cement (ft MD)	Depth of Cement (ft MD)	Cement Type	Approximate Cement Volume (ft^3)
26	16	Surface	120	Class G	280
14.75	10.75	Surface	1425	Stage 2 Lead: Class G / Light	800
		1425	3850	Stage 1 Lead: Class G / Light	1350
		3850	4350	Stage 1 Tail: Class G	280
9.875	7	3850	9850	Lead: Class G / Light	1590
6.125	4.5	6850	14600	Lead: Class G / Light	730

- Cement volumes are based on gauge hole and will be revised as necessary (caliper data or mud log) to ensure coverage of all fresh water and hydrocarbon bearing formations. The surface and intermediate string cement jobs may be a 2 stage job. Intermediate and Production casing cement jobs may use foamed or low density cement.

Approximate cement formulation and properties:

Slurry	Typical Additives	Density (ppg)	Yield (ft3/sk)	Minimum Sacks
10-3/4" Lead Stage 1 (0% excess)	Extender, Thixotropic, Gel Strength, Retarder	12.7	1.88	720
10-3/4" Lead Stage 2 (0% excess)	Extender, Thixotropic, Gel Strength	12.7	1.88	430
10-3/4" Tail Stage 1 (0% excess)	Fluid loss, Free water control, Retarder	15.8	1.15	250
7" Lead (0% excess)	Lightweight, Retarder, Antifoam, Free Water	11.0	2.21	720
4-1/2" Lead / Tail (0% excess)	Lightweight, fluid loss, free water control.	12.0	2.56	290

- Operator requests the option to substitute a single-stage foam cement job for the proposed job on the 7" intermediate and / or the 4-1/2" production string. The cement will have a lead ±13 ppg base slurry with nitrogen added to reduce the density of the slurry to ±10 ppg and a ±15.5 ppg tail slurry. The minimum volume of cement pumped will meet or exceed the volume proposed previously in the intermediate job and production job.
- Operator requests the option to substitute lightweight cement on the 7" intermediate casing and / or 4-1/2" production casing cement jobs. The cement slurry will have a density of ±10.5ppg. Any low density cements utilized will meet or exceed the strength requirements for providing casing structural support and hydraulic isolation. The minimum volume of cement pumped will meet or exceed the volume proposed previously in the 2 stage intermediate job and 1 stage production job
- Operator seeks exception to the part of COGCC Rule 317i that states that cement placed behind production casing must achieve at least 300 psi compressive strength after 24 hours and at least 800 psi compressive strength after 72 hours, when tested at 95 degF and 800 psi. The cement slurry design stated above for all slurries is capable of achieving the 300 psi /

24 hours and 800 psi / 72 hours requirements under bottomhole temperature conditions. High-temperature-capable retarders used in the slurry design prevent the cement from achieving compressive strength in 72 hours at the lower 95 degF test temperature required by the Rule. All proposed cement designs comply with the subject rule when downhole temperature is taken into effect.

Casing test pressures will meet or exceed the following:

String	Size	Test Pressure
Surface	10-3/4"	1,500 psi
Intermediate	7"	1,800 psi
Production	4-1/2"	2,800 psi

5. Circulating medium characteristics.

A. Type and anticipated characteristics of circulating medium:

Depth Interval (ft)	Mud Type	Weight (ppg)	FV (Sec/Qt)	YP (#/100 SF)	WL (cc/30 min)	pH
See 4B*	Spud	8.3-9.5	28-50	4-20	--	7.5-10.5
See 4B*	WBM	8.3-9.5	28-50	4-15	<15	8.0-11.0
See 4B*	WBM	8.6-10.5	28-50	4-15	<15	8.0-11.0

*Hole section depths correspond with casing setting depths as shown in 4B

- Operator requests the option to substitute OBM and / or salt mud during the drilling of the intermediate and / or production hole sections.

B. Quantities of mud and weighting materials:
A sufficient inventory of mud materials and treating equipment will be maintained to control mud properties adequately for well control and drilling requirements.

C. Mud system monitoring equipment:
- Trip tank - will be used to keep the hole full of fluid on trips and to monitor hole behavior during trips and wireline logging.
- Degasser - will be installed prior to drilling out the surface casing shoe.
- Flare Line System - will be installed prior to drilling out the surface casing shoe.

6. Anticipated type and amount of coring, testing and logging

A. Coring program: none anticipated

B. Drill stem tests: none anticipated

C. Logging program:
- If cement is not circulated to surface on the surface hole cement job, a log acceptable to the White River Field Office will be run to verify top of cement.
- A log acceptable to the White River Field Office will be run in the intermediate and production hole casing to verify top of cement.

Well	**Logs**	**From (ft)**	**To (ft)**
D1-D20	Cased-hole GR, CBL or Temp	4350	9850
D6, D14	SLIM Quad Combo/Shuttle deployed	4350	TD

- Logging may be performed using LWD, tubing conveyance, or wireline.

7. Bottom Hole Pressure / Temperature and Other Potential Hazards.

A. The bottom hole pressure is estimated to be 6,569 psi at 14,050' TVD. This corresponds to an equivalent mud weight of 8.99 ppg.

B. Abnormal pressure is not expected in any of these wells.

C. Maximum anticipated surface pressure while drilling the 9-7/8” intermediate hole is 1,556 psi. This is based on an 11.12 ppg fracture gradient at 4,050’ TVD with a 0.5 ppg safety factor and a pressure gradient of 0.22 psi/ft to surface.

D. Maximum anticipated surface pressure while drilling the 6-1/8” production hole is 2,660 psi. This is based on a 9.29 ppg fracture gradient at 9,200’ TVD with a 0.5 ppg safety factor and a pressure gradient of 0.22 psi/ft to surface.

E. The greatest hazard that is foreseen for this drillwell is lost circulation. Offset wells in the area have had severe lost returns and have taken gas influxes and/or had stuck pipe as a result. The lost circulation risk will be mitigated by monitoring pit volumes and pumping lost circulation material in squeezes and sweeps as necessary.

F. The anticipated bottomhole temperature is approximately 300° F.

8. Other Facets of the Proposed Operation.

A. Conductor installation: The conductor casing may be pre-installed and cemented by a smaller air/mist drilling rig.

B. Surface casing installation: The surface casing may be installed and cemented by a smaller conventional or air/mist drilling rig.

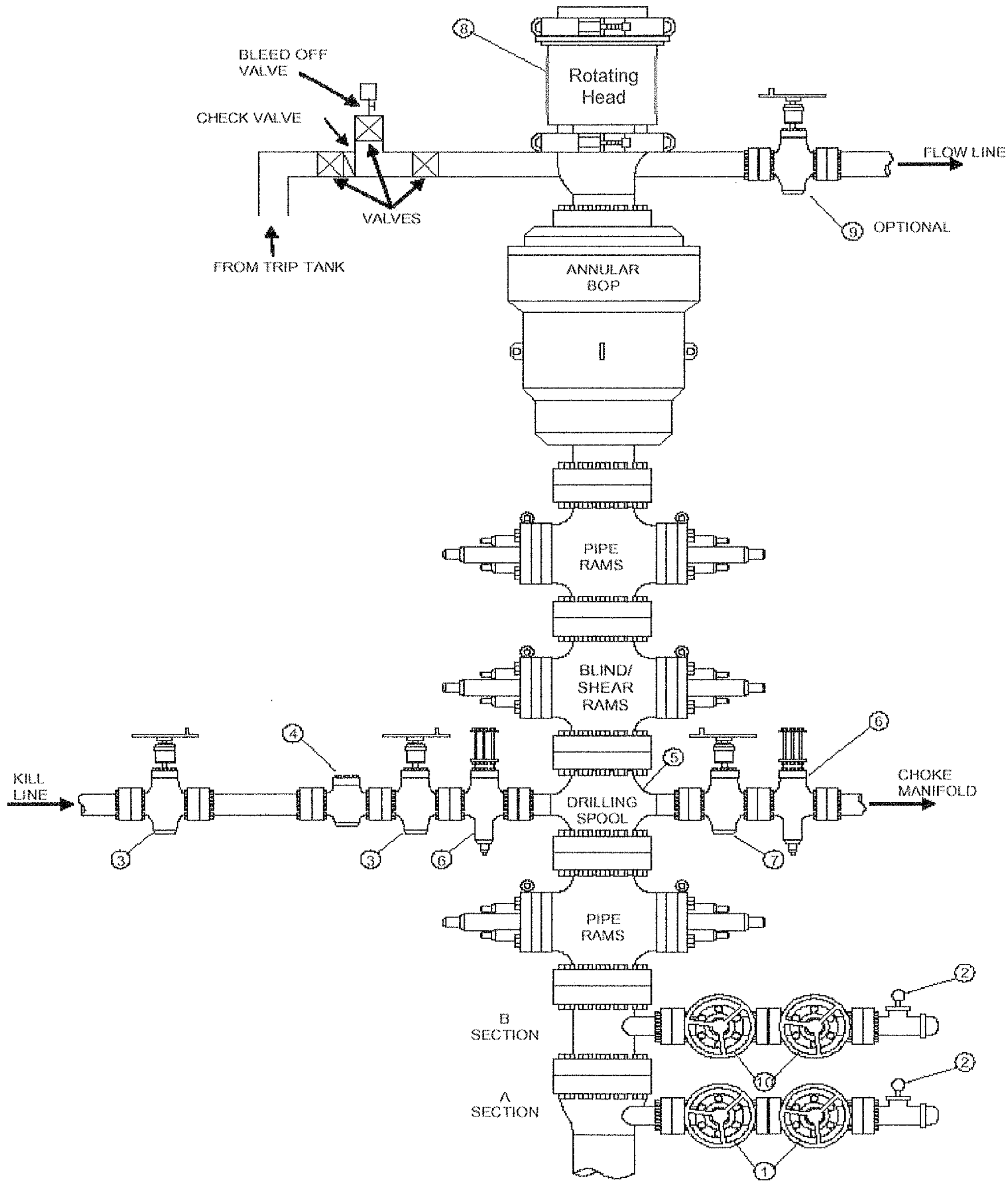
C. Mud makeup water: Produced water from Piceance Creek Unit wells, Love Ranch wells, or Freedom Unit wells may be one of the sources of water for the mud system in the intermediate and production hole section.

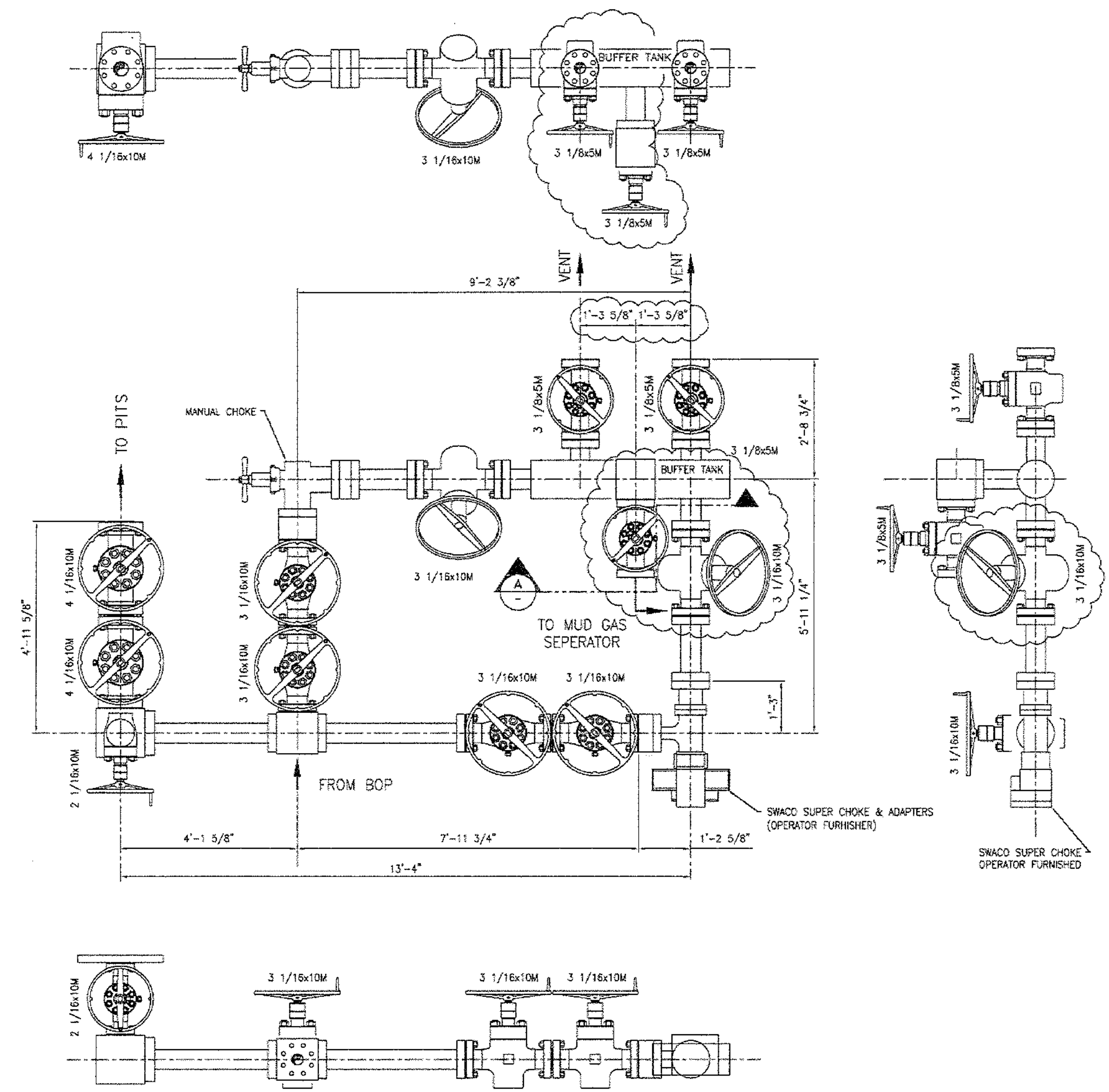
D. Subsurface hazard mitigation plans: A shallow drilling hazard evaluation was performed by ExxonMobil and no hazardous conditions were identified. Nonetheless, a diverter system will be rigged up on the conductor while drilling the surface hole such that gas flow can be routed to the reserve pits or sand trap, if necessary.

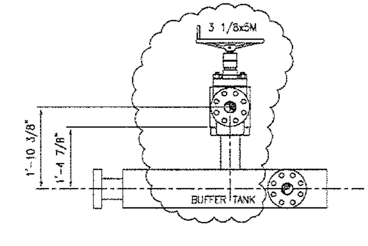
E. Completion operations: Perforate and frac several intervals throughout the Mesa Verde formation based on wireline logs and shows.

Contact Katie Liddell at (281) 654-0025 with any questions concerning this Drilling Plan.

Exxon Mobil
Typical 5000 PSI BOP Stack Configuration







SECTION A

ISSUED FOR FABRICATION
July-26-2007
DRAFTSMAN ______
ENGINEER ______

PROPRIETARY

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REV	DATE	DESCRIPTION	BY
A	7/26/07	MOVED BUFFER TANK CONNECTION	LT

ENGINEERING APPROVAL | DATE

HELMERICH & PAYNE INTERNATIONAL DRILLING CO.

TITLE:	3" NOM-10M CHOKE MANIFOLD
CUSTOMER:	EXXON/MOBIL
PROJECT:	F4S+ RIGS 320,321,325 & 326 ONLY
DRAWN: MWL	DATE: 01-24-07
SCALE: 1 1/2"=1'-0"	SHEET: 2 OF
DWG. NO.:	F4S+-H-601
REV:	A